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10/559,870

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EXAMINER

BENSON, WALTER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TAKETO TAKEUCHI

Appeal 2010-000888
Application 10/559,870
Technology Center 2800

Before ROBERT E. NAPPI, JOSEPH F. RUGGIERO,
and ELENI MANTIS MERCADER, *Administrative Patent Judges*.

MANTIS MERCADER, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the final rejection of claims 1-16. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

INVENTION

Appellant's claimed invention is directed to a control device of a vehicle-driving motor. When the vehicle is stalled on a hill and a temperature of a phase on which a current is concentrated reaches a restrictive temperature, the torque is reduced. Accordingly, the vehicle moves slightly backward, and the current-carrying phase on which the current is concentrated is changed. When the current-carrying phase is changed, a torque-reducing process is conducted on the basis of the temperature of the new current-carrying phase. Thus, the torque-reducing process is performed on the basis of the temperature of the active phase in which a current flows, and therefore the torque-reducing process is conducted less frequently compared with the known technologies in which the torque-reducing process is conducted on the basis of the indicative torque or the maximum temperature. *See generally* Spec.4-5; Fig. 1.

Claim 1, reproduced below, is representative of the subject matter on appeal:

1. A control device of a vehicle motor with a plurality of coils, comprising:
 - a temperature sensor that detects a temperature of each coil of the plurality of coils, each coil supplying an alternating current to a corresponding phase of the motor; and
 - a controller that:
 - controls a torque of the vehicle motor;

detects a stalled state of a vehicle;
detects a current phase angle of the vehicle motor; and
selects one detected temperature detected by the temperature sensor, which is based on a detected current phase angle, wherein:
the torque of the vehicle motor is reduced when the stalled state of the vehicle is detected and when a selected temperature exceeds a restrictive temperature, and
the selected temperature is from a coil of the plurality of coils where a maximum current flow is detected, with the maximum current flow being detected based on the detected current phase angle.

THE REJECTION

The Examiner relies upon the following as evidence of unpatentability:

Matsunaga	US 6,114,828	Sep. 5, 2000
Shimazaki	US 2002/0116100 A1	Aug. 22, 2002

The following rejection is before us for review:

The Examiner rejected claims 1-16 under 35 U.S.C. § 103(a) as being unpatentable over Matsunaga in view of Shimazaki.

ISSUE

The pivotal issue is whether Matsunaga in view of Shimazaki teaches the limitation of “the selected temperature is from a coil of the plurality of coils where a maximum current flow is detected” as recited in independent claim 1.

PRINCIPLES OF LAW

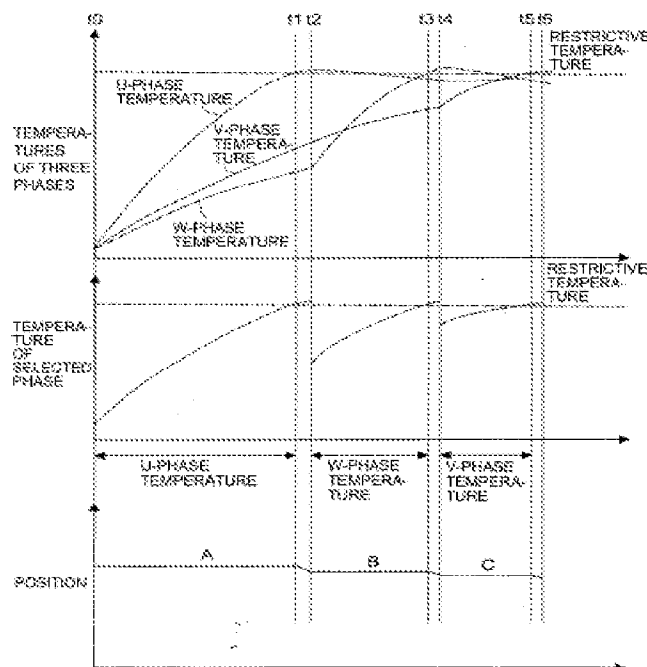
To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *See In re Royka*, 490 F.2d 981, 985 (CCPA 1974).

ANALYSIS

Appellant argues (App. Br. 12), *inter alia*, that the Examiner's reliance on Shimazaki ((Ans. 3 (citing ¶¶ [0015]-[0016])) for the teaching that a maximum temperature comes from a maximum current is misplaced. Appellant explains (App. Br. 12) that the distinction lies in that current flows intensively into a phase when the motor vehicle is in a *stalled state* and the respective temperature of the coil has not become the maximum temperature yet.

We agree with Appellant.

Appellant's Figure 7 is reproduced below:



As argued (App. Br. 12) and as shown in Appellant's Figure 7, between times t2 and t3, the phase of the maximum temperature is the U-phase temperature for most of this time period, even though the W-phase is the phase where the maximum current flows (*also see* Spec. 15:8-16-9). Thus, we agree with Appellant that the Examiner's reliance on Shimazaki in suggesting that a maximum temperature comes from the maximum current is misplaced. Accordingly, the limitation of "the selected temperature is from a coil of the plurality of coils where a maximum current flow is detected" is not met by Shimazaki, because even if Shimazaki teaches that the maximum temperature comes from the maximum current, claim 1 requires that the *selected temperature comes from where the maximum current flow is detected* and that is not necessarily tantamount to the maximum temperature as indicated by Appellant's Figure 7.

Furthermore, Shimazaki (¶¶ [0015]-[0016]) only describes that the abnormal temperature of "the armature coils" as a whole is detected, and not that the detected temperature is "from a coil of the plurality of coils" as recited in claim 1. While the Examiner (Ans. 14) cites Matsunaga (col. 4, ll. 21-32, col. 7, ll. 25-35) for teaching that the selected temperature is from a coil of a plurality of coils, we can not find such a teaching in the cited sections or elsewhere in Matsunaga. On the contrary, Matsunaga only describes detecting the temperature Ts, by using a thermistor 6, of each of the cooling fins onto which each of the switching devices T1 through T6 are attached (col. 3, ll. 43-47). Based on these temperatures, the motor torque is reduced (col. 5, l. 59-col 6, l. 53). Thus, clearly Matsunaga does not teach that the selected temperature is from "a coil of a plurality of coils" as recited in claim 1.

Accordingly, for the reasons articulated *supra*, we will reverse the Examiner's rejection of independent claim 1, and for similar reasons, the rejections of claims 2-16.

CONCLUSION

Matsunaga in view of Shimazaki does not teach the limitation of "the selected temperature is from a coil of the plurality of coils where a maximum current flow is detected."

ORDER

The decision of the Examiner to reject claims 1-16 is reversed.

REVERSED

babc

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